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January 8, 2001

BOX PCT

Honorable Commissioner of
Patents and Trademarks
Washington, D.C. 20231

PCT/EP00/04067
- filed May 5, 2000

Re: Application of Michael **BECKER**, Lothar **BIHY** and Horst **KELLER**
**"COATED MINERAL WOOL PRODUCT AND PROCESS FOR
ITS PRODUCTION"**
Our Ref.: 3535.010

Dear Sir:

The following documents and fees are submitted herewith in connection with the above application for the purpose of entering the National stage under 35 U.S.C. §371 and in accordance with Chapter II of the Patent Cooperation Treaty:

- X this express request to immediately begin national examination procedures (35 U.S.C. 371(f)).
- X an executed Declaration and Power of Attorney.
- X a German Language International Application with European Search Report
- X an English (translation of the) International Application.
- an English (translation of) Article 19 claim amendments.
- English translation of Article 34 amendments (annexes to the IPER) and IPER.
- an executed Assignment and PTO 1595 form.
- X Preliminary Amendment.

09/745500
534-150-1707/770 08 JAN 2001

Attorney Docket: 3535.010

It is assumed that copies of the International Application, the International Search Report, the International Preliminary Examination Report, and any Articles 19 and 34 amendments as required by §371(c) will be supplied directly by the International Bureau, but if further copies are needed, the undersigned can easily provide them upon request.

The Government filing fee is calculated as follows:

Total claims	20	-	20	=	_____	x	\$18	=	\$
Independent Claims	3	-	3	=	_____	x	\$80	=	\$
Base Fee									\$860.00*

TOTAL FILING FEE \$ 860.00

A copy of the European Search Report is attached.

A check for the statutory filing fee of \$860.00 is attached. Please charge or credit any difference or overpayment to Deposit Account No. 16-0877. The Commissioner is hereby authorized to charge any fees under 37 C.F.R. §1.492 which may be required during the entire pendency of the application to said Account.

Priority is claimed from May 7, 1999, based on German Application No. 199 21 284.8.

Respectfully submitted,

PENDORF & CUTLIFF
Attorneys for Applicant

By _____

Stephan A. Pendorf
Registration No. 32,665

09/743300

534 REC. 1/10/01 08 JAN 2001
PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of

Michael BECKER, Lothar BIHY and Horst KELLER

Appln. No.:

Filed: January 8, 2001

For: COATED MINERAL WOOL PRODUCT, AND PROCESS FOR ITS PRODUCTION

Attorney Docket No.: 3525.010

PRELIMINARY AMENDMENT

Box: PCT

Honorable Commissioner of
Patents and Trademarks
Washington, D.C. 20231

Sir:

Prior to examination of the above-identified application,
please amend the application as follows:

IN THE SPECIFICATION:

Page 1, line 1, delete "Description";

Page 1, delete lines 5-10 and insert:

--BACKGROUND OF THE INVENTION

Field of the Invention

The invention concerns a mineral wool composite material suitable for use as a ceiling or facade insulation board, comprising a mineral wool product, a fiber mat provided on at least one side of the mineral wool product, and a coating based on a siliceous material and containing at least one organic plastic coated on said fiber mat. The invention further concerns a process by which such a product can be produced, and further yet, a coating composition suitable for use in such a product.

Description of the Related Art--.

Page 3, line 12, insert:

--SUMMARY OF THE INVENTION--;

Page 3, delete lines 20-24 in their entirety and insert:

--The objects are attained in accordance with the present invention by the provision of a mineral wool composite material suitable for use as a ceiling or facade insulation board, comprising a mineral wool product, a fiber mat provided on at least one side of the mineral wool product, and a coating based on a siliceous material and containing at least one organic plastic coated on said fiber mat. The objects are further attained by a process by which such a product can be produced, and further yet, a coating composition suitable for use in such a product.--

Page 7, line 22, insert:

--BRIEF DESCRIPTION OF THE DRAWINGS--.

Page 7, line 32, insert:

--DETAILED DESCRIPTION OF THE INVENTION--.

IN THE CLAIMS:

Page 11, line 1, please delete "CLAIMS" and insert therefore

--What is Claimed is:--

Please amend the claims as follows:

1. (Amended) A mineral wool [product] composite material suitable for use [, such] as a ceiling or facade insulation board, comprising: [having]

a mineral wool product having first and second sides;
a fiber mat (3) provided on at least one side of said
mineral wool product; and [a]

a coating [layer] (2) based on a siliceous material and
containing at least one organic plastic coated on said fiber
mat (3);

such that said [characterised in that a] fiber mat (3)
is provided between said coating (2) and [the surface of]
said mineral wool product (1).

2. (Amended) The mineral wool product according to claim 1,
[characterised in that] wherein said product is obtained by
a process comprising [it is obtainable by]

application of a foamed coating mass on a mineral wool
product laminated with a fiber mat and

subsequent drying, wherein the coating mass comprises
[presents] the following composition:

20-40% (wt.) silica sol (40% (wt.) solid content SiO₂)

10-25% (wt.) plastic dispersion

1-5% (wt.) aluminum hydroxide

0.5-2% (wt.) foaming agent

0.05-1% (wt.) foam stabiliser

balance: water, and

optionally flameproofing agent and/or further additions.

3. (Amended) The mineral wool product according to claim 1 [or
2], [characterised in that] wherein said fiber mat (3) is a
glass [glas] wool mat.

4. (Amended) The mineral wool product according to claim 1,
[any one of claims 1 to 3, characterised in that] wherein

said coating [layer] (2) is electrically conductive and/or magnetically active [effective].

5. (Amended) The mineral wool product according to claim 4, [characterised in that] wherein said layer (2) further contains:

electrically conductive and/or magnetically attenuating substances [, such as carbon, in particular powdered carbon, carbon fibers, graphite, in particular expanded graphite, mu-metal, chromium dioxide, metal whisker, carbonyl iron].

6. (Amended) The mineral wool product according to claim 1, [any one of claims 1 to 5, characterised in that] wherein said coating [layer] (2) additionally contains [presents] foam layer forming agents [, in particular expanded graphite, pentaerythritol].

7. (Amended) The mineral wool product according to Claim 1, [any one of claims 1 to 6, characterised in that] wherein the weight per surface unit of said fiber mat (3) is 20 to 150 g/m² [, in particular 40 to 80 g/m², preferably approx. 60 g/m²].

8. (Amended) A process for producing a mineral wool [product (1) according to any one of claims 1 to 7] composite material suitable for use as a ceiling or facade insulation board, said composite material comprising:

a mineral wool product having first and second sides;
a fiber mat (3) provided on at least one side of said mineral wool product; and

a coating (2) based on a siliceous material and containing at least one organic plastic coated on said fiber mat (3);

such that said [characterised in that a] fiber mat (3) is provided between said coating (2) and said mineral wool product (1);

said process comprising:

[characterized in that]

applying a foamed coating (2) on the basis of a siliceous binder [is applied] on a fiber mat lamination (3) of a mineral wool product, and

bursting the foam bubbles [are made to burst] through drying.

9. (Amended) The process according to claim 8, [characterized in that] wherein an application quantity of 100 g/m² to 500 g/m² [, preferably approx. 300 g/m²] of foamed coating mass is used.
10. (Amended) The process according to claim 8 [or 9], [characterised in that] wherein a foam weight per liter of 100 g/l to 400 g/l [, preferably approx. 250 g/l] is used.
11. (Amended) The process according to [any one of] claim[s] 8 [to 10], [characterized in that] wherein said layer (2) is dried in a tunnel furnace [, preferably at at temperature of approx. 260°C].
12. (Amended) The process according to [any one of] claim[s] 8 [to 11], [characterized in that] wherein a coating mass having the following composition is used:
20-40% (wt.) silica sol (40% (wt.) solid content SiO₂)

10-25% (wt.) plastic dispersion
1-5% (wt.) aluminum hydroxide
0.5-2% (wt.) foaming agent
0.05-1% (wt.) foam stabiliser
balance: water, and
optionally flameproofing agent and/or further additions.

13. (Amended) A coating mass having the following composition:
20-40% (wt.) silica sol (40% (wt.) solid content SiO₂)
1-5% (wt.) aluminum hydroxide
0.5-2% (wt.) foaming agent
0.05-1% (wt.) foam stabiliser
balance: water, and
optionally flameproofing agent and/or further additions,
[characterised in that] wherein
said coating mass comprises [it contains] 10-25% (wt.)
plastic dispersion.

Please add the following claims:

- 14. The mineral wool product according to claim 5, wherein
said electrically conductive and/or magnetically attenuating
substances are selected from the group consisting of
powdered carbon, carbon fibers, graphite, in particular
expanded graphite, mu-metal, chromium dioxide, metal
whisker, carbonyl iron.
15. The mineral wool product according to claim 6, wherein said
foam layer forming agents are selected from the group
consisting of expanded graphite and pentaerythritol.

U.S. Application: NEW
Preliminary Amendment

Attorney Docket: 3535.010

16. The mineral wool product according to claim 7, wherein the weight per surface unit of said fiber mat (3) is 40 to 80 g/m².
17. The mineral wool product according to claim 7, wherein the weight per surface unit of said fiber mat (3) is approx. 60 g/m².
18. The process according to claim 8, wherein an application quantity of approx. 300 g/m² of foamed coating mass is used.
19. The process according to claim 8, wherein a foam weight per liter of approx. 250 g/l is used.
20. The process according to claim 8, wherein said layer (2) is dried in a tunnel furnace at temperature of approx. 260°C.--

REMARKS

The specification claims have been amended to conform the original translated specification and claims to U.S. requirements, i.e., appropriate section headers are added, reference in the specification to the claims have been amended in order to eliminate multiple dependent claims and claims improperly depending from multiple dependent claims, and to otherwise conform the claims to U.S. practice. Care has been taken to ensure that no new matter is added to the text.

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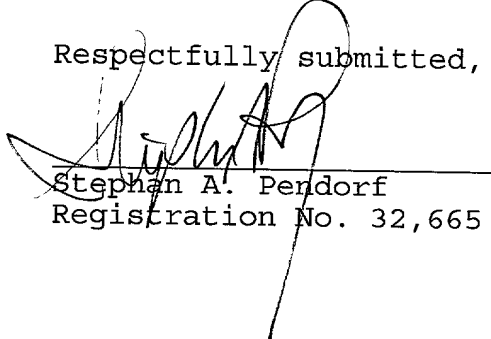
U.S. Application: NEW
Preliminary Amendment

Attorney Docket: 3535.010

Entry and favorable consideration prior to consideration are respectfully requested.

Respectfully submitted,

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Stephan A. Pendorf
Registration No. 32,665

Date: January 8, 2001

EXPRESS MAIL CERTIFICATE

"EXPRESS MAIL" MAILING LABEL NUMBER: EL568148710US

DATE OF DEPOSIT: January 8, 2001

I HEREBY CERTIFY that the foregoing PRELIMINARY AMENDMENT and a stamped receipt post card are being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 C.F.R. §1.10 on the date indicated and is addressed: ATTN: Box PCT, Commissioner of Patents and Trademarks, Washington, D.C. 20231.

The Commissioner is hereby authorized to charge any additional fees which may be required at any time during the prosecution of this application without specific authorization, or credit any overpayment, to Deposit Account Number 16-0877.


Bonnie L. Horst

Coated Mineral Wool Product, and Process for its Production

The present invention relates to a coated mineral wool product such as an an acoustically transparent ceiling panel or a facade insulation board in accordance with the preamble of claim 1, a process for producing such a mineral wool product in accordance with claim 8, and a coating mass for producing an acoustically transparent mineral wool product in accordance with claim 13.

Particularly in acoustics and architectural acoustics, sound absorbing wall and ceiling constructions are employed essentially for two tasks. On the one hand, this is the reduction of the sound level in a room in order to counteract noise in workplaces and living spaces, on the other hand the improvement of acoustical conditions by correcting the reverberation period. A sound absorber effective for both applications must possess a sufficiently high flow resistance for the obtention of high friction losses, and at the same time a porous structure to better allow penetration by sound waves. For sound absorption, for example sound absorbing panels of mineral wool were used in the prior art. Sound deadening (sound absorption) is basically understood to be the conversion of sound energy into heat. For the purposes of sound absorption, mineral wool being a porous and open-cell material is particularly well suited. Energy conversion fundamentally takes place as a result of friction processes inside the absorber material.

Open mineral wool products such as, e.g., mineral wool boards are
30 not suited for acoustic insulation in interiors if only for esthetic reasons.

For sound absorption in the visible range, the prior art consequently i.a. employed insulation boards of mineral wool provided on at least one side with a lining, or lamination, of resin-bonded glass fiber mat having a weight per surface unit between 20 and 150 g/m². The glass fiber mats were provided with various decorative printings for esthetic reasons.

In addition to acoustic and esthetic properties, the sound absorbing or acoustically transparent materials are moreover generally expected to be not flammable within the meaning of German Industrial Standard
5 DIN 4102 Part 1, building materials rating A.

In order to attain building materials rating A, a low binder content is aspired in the fiber mats used as a lining for insulation boards in the prior art, such that these are comparatively brittle and only attain a poor
10 impact penetration strength. As a result, this had to be compensated for in the prior art by an enhanced bulk density of the mineral wool body, resulting in high costs for energy and starting materials.

In terms of sound insulation, however, the weight per surface unit
15 and the sound absorption are diametrically opposed to each other:

High weight per surface unit values result in better impact penetration strengths, whereas lower weight per surface unit values result in better sound absorption characteristics.
20

For the production of the above mentioned insulation boards laminated with fiber mats, the glass fiber mats were applied onto the uncured mineral wool mat by means of a suitable adhesive and cured in a tunnel furnace. Following the curing process, mechanical molding into
25 the corresponding size formats by means of machining units and finally packaging was carried out. Owing to this post-processing, however, a considerable amount of fiber material was discharged, which in turn results in soiling of the surface and associated cleaning work.

In particular, there resulted a certain reject rate of panels due to soiling and deformations of the fiber mat surface inside the tunnel furnace.
30

Although the sound absorbing mineral wool insulation boards thus
35 produced already presented good sound absorption properties, their handling on the construction site was frequently connected with damage

and therefore replacement of the mineral wool products because of the low impact penetration strengths of the glass fiber mats.

Starting out from this prior art, it was therefore the object of the present object to furnish coated mineral wool products having higher impact penetration strength at low cost, which are suited, for example, both for acoustically transparent ceiling panels and facade insulation boards which are subject to higher mechanical strain than ceiling panels.

10 This object is attained by the characterising features of claim 1.

In terms of process technology, this object is attained by the characterising features of claim 8.

15 When, in accordance with the invention, a mineral wool product laminated with a fiber mat is coated on at least one side with a layer based on a siliceous material and containing at least one organic plastic, it was surprisingly found that the surface of the mineral wool product assumes a membrane-type character, i.e., it yields to pressure and
20 springily resumes its former shape upon release of pressure, whereby the impact penetration strength is increased considerably.

Owing to the combination of the features "membrane-type character" and "enhanced impact penetration strength", the surface of the mineral wool product according to the invention becomes markedly
25 more resistant against any possible, inadvertent destruction occurring on the construction site.

In addition it is another advantage of the mineral wool products according to the invention that the layer may receive an admixture of
30 paint pigments according to need, whence they fit in with the respective circumstances of interior design.

The mineral wool products according to the invention present high
35 degrees of sound absorption in comparison with conventional coated mineral wool products.

The process according to the invention furnishes products having a faultless, clean surface, namely owing to the fact that the coating mass is applied only after the so-called tunnel furnace, i.e., when the mineral wool body is already present in the cured state. Moreover it is essential that the coating mass is applied on the glass fiber mat in the form of a foam, for thereby it is possible to massage, as it were, the coating mass into the fiber mat and the adjacent body surface. This may, for example, be effected by means of an elastic roller, whereby an intimate connection between the surfaces of the fiber mat and of the underlying mineral wool is achieved through capillary effect. Fundamentally the coating may, however, also be carried out by immersion, spraying, flooding or doctor blade. The surface will, however, still be sealed in the wet state. The compound will obtain the actual open-pore, acoustically transparent surface only through the subsequent drying of the body surface coated with foam mass in a drying furnace, e.g., under intense infrared heating. Owing to this drying, the macroscopic air bubbles burst prior to curing of the coating mass and thus release the pores of the mat. As a result of the adhesion forces, both the mat fiber and the mineral fiber are enveloped by the coating mass which thus cures on the fiber.

The compound of glass fiber mat with mineral wool thus allows for optimum spatial distribution of forces in the event of impact stress, which is furthermore assisted by an elastifying constituent in the mass.

In accordance with the invention, a coating mass having the following composition is used:

30	20-40% (wt.)	silica sol (40% (wt.) solid content SiO_2)
	10-25% (wt.)	plastic dispersion
	1-5% (wt.)	aluminum hydroxide
	0.5-2% (wt.)	foaming agent
	0.05-1% (wt.)	foam stabiliser,
35	balance:	water, and
	optionally	flameproofing agent and/or further additions.

Although a similar coating mass is known from the prior art in accordance with EP 0 728 124 B1, the latter comprises plastic dispersion contents of a maximum 10% (wt.) on the one hand, whereas
5 the instant plastic dispersion is contained at 10% (wt.) at the least, and on the other hand that coating is used merely for the purposes of mechanical stabilisation of the respective mineral wool products.

In particular, the prior art of EP 0 728 124 B1 stresses the
10 importance of bitumen being prevented from penetrating through the coating material into the roof insulation boards thereof, or where used as so-called plaster base panels, their acquiring an affinity for the plaster mass.

15 The coating mass of EP 0 728 124 B1 is deeply impressed into the mineral wool surface, bringing about cobweb-type bridges of coating material between the fibers.

Other than in the prior art of EP 0 728 124 B1, in the present
20 invention the inventive coating mass is applied on a fiber mat-laminated mineral wool product, generally a mineral wool board, resulting in the surprising properties of the mineral wool product according to the invention.

25 A preferred coating mass is represented in claim 2, wherein the content of organic substances is irrelevant under the aspect of flammability.

Using mineral wool products with a glass wool mat lamination in
30 accordance with claim 3 has the advantage that herein it is possible to use a low-cost standard fiber mat which need not specifically be produced for the instant mineral wool product.

A mineral wool product in accordance with claim 4 has the
35 advantage that - if the layer/coating is made to be electrically and/or

magnetically effective, the mineral wool product may, e.g., be used as a radar absorber - or quite generally in the event of so-called electrosmog.

Preferred substances for a coating for the purpose of radar
5 radiation absorption are represented in claim 5.

Advantageously, mineral wool products may be provided with a
layer presenting, in accordance with claim 6, foam layer forming agents,
particularly expanded graphite, pentaerythritol or the like which bring
10 about thermally insulating properties in the case of a fire.

Preferred weight per surface unit values of the mat are represented
in claim 7.

15 For the purposes of the present invention, the foamed coating mass
is applied preferably in an application quantity of 100 g/m^2 to 500 g/m^2 ,
preferably approx. 300 g/m^2 in accordance with claim 9.

In the production of the foamed coating mass, preferably a foam
20 weight per liter of 100 g/l to 400 g/l , preferably approx. 250 g/l in
accordance with claim 10 is used.

The coating of the mineral wool product according to the invention
is preferably dried in a drying kiln at a temperature of approx. 260°C .
25 Here it was found that at this temperature the macroscopic air bubbles
within the layer burst prior to curing of the coating mass, resulting in the
generation of an open-pore compound through which sound waves may
penetrate into the inside of the mineral wool product to be absorbed
there. At the same time, the coating acquires a membrane-type
30 character so as to have mechanical strength.

Further advantages and features of the present invention may be
taken from the description of an embodiment and by reference to the
drawing, wherein:

35

Fig. 1: is a sectional view of a mineral wool product according to the invention; and

Fig. 2: is a graph showing impact penetration strength in accordance with the depth of impression.

The board-shaped mineral wool product, shown under 1 in the sectional view of Fig. 1, presents a coating 2 of a suitable glass fiber mat 3 intimately combined with the surface of a body 4 of mineral wool.

In the case of the example, the glass fiber mat is adhered to the body 4 in the course of curing inside the tunnel furnace, namely as a result of the organic binder which gives shape to the body. The glass mat 3 adhered to the mineral wool body 4 has a weight per surface unit of approx. 60 g/m².

For producing the mineral wool product 1 in the example of a ceiling insulation board, the recipe given below is used:

20	44.7% (wt.)	silica sol (40% solid content SiO ₂)
	20% (wt.)	Bayceram [®] as a polyester-polyurethane based plastic dispersion
	15% (wt.)	aluminum hydroxide
	4% (wt.)	colorant
25	2.1% (wt.)	foaming agent
	0.3% (wt.)	foam stabiliser
	balance:	water

As a plastic dispersion, a polyester-polyurethane dispersion by Bayer AG, water content: 50% having the tradename "Bayceram[®]" is used in the present embodiment. It is, of course, possible to use any plastic dispersion which is water and light resistant on the one hand and brings about particularly good elasticity on the other hand. Thus it is, for example, also possible to use latex dispersions.

As a foaming agent, W53 by Zschimmer & Schwarz was used in the exemplary case, and as a foam stabiliser PS1, also by Zschimmer & Schwarz.

5 The coating mass is foamed to about 6 times the unfoamed volume with the aid of an agitator. The foam weight per liter is approx. 250 g/l. The foamed coating mass is applied on the surface of the fiber mat 3 by means of an elastic roller. Through massaging the
10 foam into the mat surface which is achieved with the aid of the elastic roller, and the capillary effect of the underlying mineral wool, an intimate permeation is achieved, with the surface still being sealed.

15 The coated raw product is in the exemplary case dried in a drying kiln at intense infrared heating at approx. 260°C. Through this drying process, the macroscopic air bubbles burst prior to curing of the coating mass and form open pores 5 in the coating 2, which at least partly communicated with pores 6 of the glass fiber mat 3 and thus with the mineral wool body 4.

20 As a result of this open-pore formation of the coating 2, sound waves may freely penetrate into the mineral wool body 4 to be absorbed therein. On the other side, for example when used as a ceiling panel, this open-pore formation is hardly visible to the
25 observer who will receive the impression of a smooth, closed surface. Due to the adhesion forces, both the mat fiber and the mineral fiber are enveloped by the coating mass which thus cures on the fiber.

30 Ceiling insulation boards 1 produced in this way present a membrane-type behavior on the side having the coating applied due to the springy-elastic properties of the compound of coating 2, glass mat 3 and mineral wool body 4.

35 The ceiling panels 1 thus produced moreover present a high degree of sound absorption and present an appealing surface at markedly

enhanced impact penetration strength in comparison with the conventional mineral wool products lined with fiber mats.

5 In Fig. 2, which shows the impact penetration strength plotted against the depth of impression, it can be seen that the impact penetration strength of the mineral wool products according to the invention is approximately tripled in comparison with glass fiber mats without a foam coating.

10 The mineral wool products according to the invention 1 are thus on the one hand excellently suited for insertion in ceiling constructions of hung ceilings. On the other hand, however, owing to their high impact penetration strength, they are also well suited for use as facade insulation boards to allow for a reduction of the bulk
15 densities thereof.

Claims

1. A mineral wool product, such as a ceiling or facade insulation board, having on at least one side a layer (2) based on a siliceous material and containing at least one organic plastic, characterized in that
- a fiber mat (3) is provided between said coating (2) and the surface of said mineral wool product (1).
2. The mineral wool product according to claim 1, characterised in that it is obtainable by application of a foamed coating mass on a mineral wool product laminated with a fiber mat and subsequent drying, wherein the coating mass presents the following composition:
- | | |
|---------------|--|
| 20-40% (wt.) | silica sol (40% (wt.) solid content SiO_2) |
| 10-25% (wt.) | plastic dispersion |
| 1-5% (wt.) | aluminum hydroxide |
| 0.5-2% (wt.) | foaming agent |
| 0.05-1% (wt.) | foam stabiliser |
| balance: | water, and |
| optionally | flameproofing agent and/or further additions. |
3. The mineral wool product according to claim 1 or 2, characterised in that said fiber mat (3) is a glas wool mat.
4. The mineral wool product according to any one of claims 1 to 3, characterised in that said layer (2) is electrically and/or magnetically effective.

5. The mineral wool product according to claim 4, characterised in that said layer (2) further contains:

5 electrically conductive and/or magnetically attenuating substances, such as carbon, in particular powdered carbon, carbon fibers, graphite, in particular expanded graphite, mu-metal, chromium dioxide, metal whisker, carbonyl iron.

- 10 6. The mineral wool product according to any one of claims 1 to 5, characterised in that said layer (2) additionally presents foam layer forming agents, in particular expanded graphite, pentaerythritol.

- 15 7. The mineral wool product according to any one of claims 1 to 6, characterised in that the weight per surface unit of said fiber mat (3) is 20 to 150 g/m², in particular 40 to 80 g/m², preferably approx. 60 g/m².

- 20 8. A process for producing a mineral wool product (1) according to any one of claims 1 to 7,

25 **characterised in that**

a foamed coating (2) on the basis of a siliceous binder is applied on a fiber mat lamination (3) of a mineral wool product, and the foam bubbles are made to burst through drying.

- 30 9. The process according to claim 8, characterised in that an application quantity of 100 g/m² to 500 g/m², preferably approx. 300 g/m² of foamed coating mass is used.

35

10. The process according to claim 8 or 9, characterised in that a foam weight per liter of 100 g/l to 400 g/l, preferably approx. 250 g/l is used.

5

11. The process according to any one of claims 8 to 10, characterised in that said layer (2) is dried in a tunnel furnace, preferably at a temperature of approx. 260°C.

10

12. The process according to any one of claims 8 to 11, characterised in that a coating mass having the following composition is used:

- | | | |
|----|---------------|--|
| 15 | 20-40% (wt.) | silica sol (40% (wt.) solid content SiO ₂) |
| | 10-25% (wt.) | plastic dispersion |
| | 1-5% (wt.) | aluminum hydroxide |
| | 0.5-2% (wt.) | foaming agent |
| | 0.05-1% (wt.) | foam stabiliser |
| | balance: | water, and |
| 20 | optionally | flameproofing agent and/or further additions. |

13. A coating mass having the following composition:

- | | | |
|----|---------------|--|
| 25 | 20-40% (wt.) | silica sol (40% (wt.) solid content SiO ₂) |
| | 1-5% (wt.) | aluminum hydroxide |
| | 0.5-2% (wt.) | foaming agent |
| | 0.05-1% (wt.) | foam stabiliser |
| | balance: | water, and |
| 30 | optionally | flameproofing agent and/or further additions, |

characterised in that

it contains 10-25% (wt.) plastic dispersion.

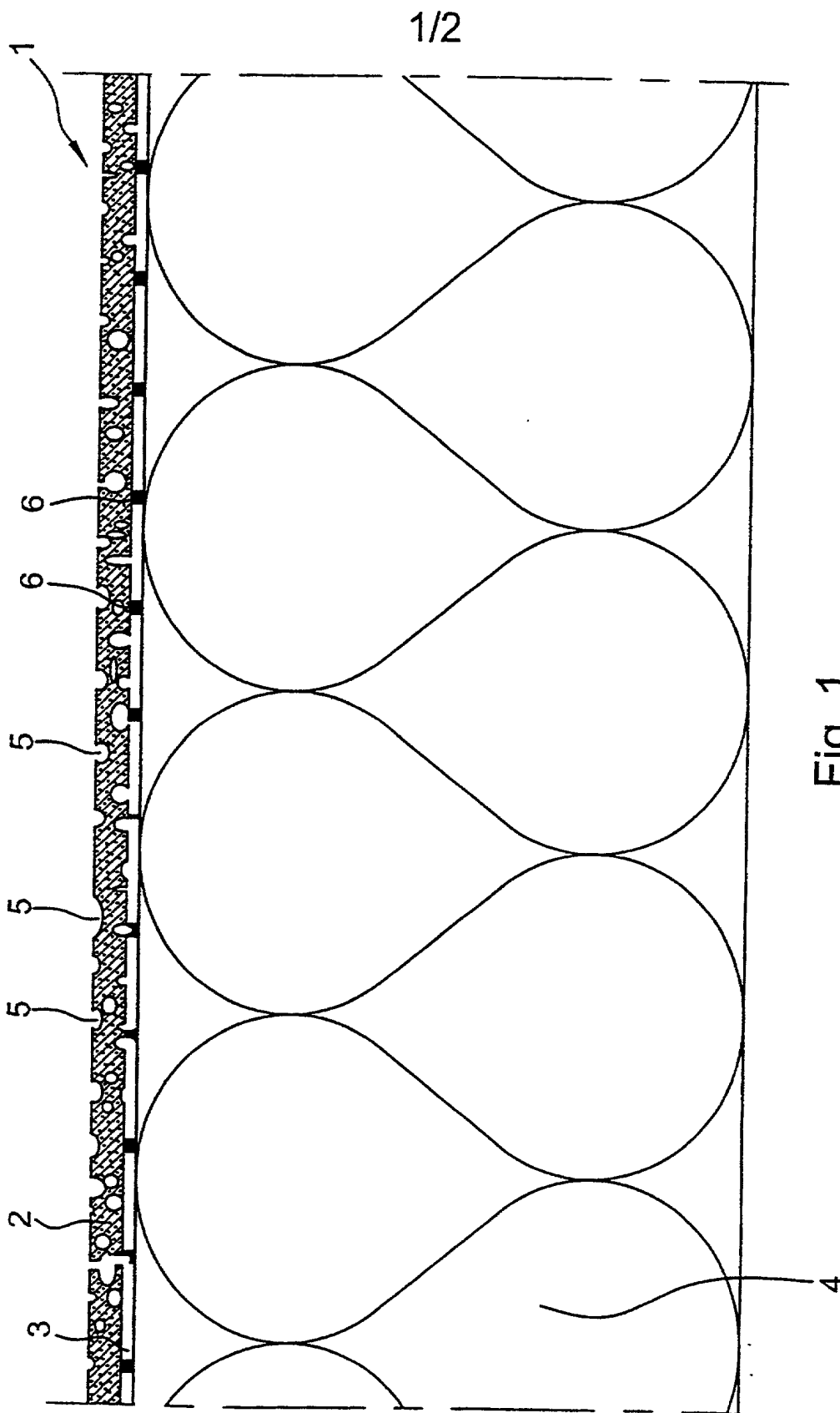


Fig. 1

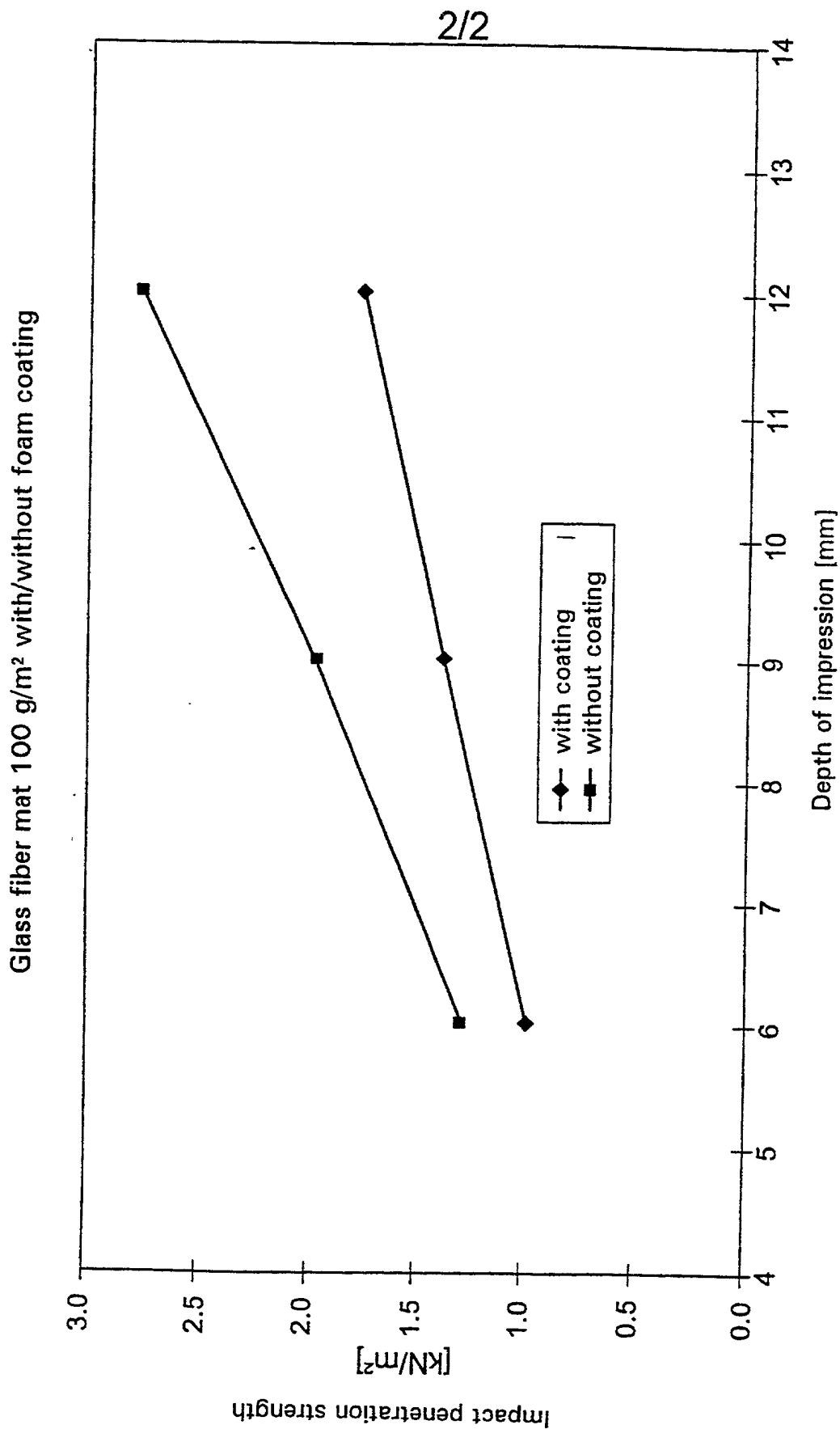


Fig. 2

DECLARATION AND POWER OF ATTORNEY

As a below named inventor, I hereby declare that my residence, post office address and citizenship are as stated below next to my name: that I verily believe I am the original, first and sole inventor (if only one name is listed below) or a joint inventor (if plural names are listed below) of the subject matter claimed and for which a patent is sought in the application entitled:

COATED MINERAL WOOL PRODUCT AND PROCESS FOR ITS PRODUCTION

which application is:

X the attached application
(for original application)

Based on Application No. _____
filed _____, and amended on _____
(for declaration not accompanying application)

that I have reviewed and understand the contents of the specification of the above-identified application, including the claims, as amended by any amendment referred to above; that I acknowledge the duty to disclose to the Office all information known to me to be material to patentability as defined in Title 37, Code of Federal Regulations, §1.56, that I hereby claim foreign priority benefits under Title 35, United States Code §119, §172 or §365 of any foreign application(s) for patent or inventor's certificate listed below and have also identified on said list any foreign application for patent or inventor's certificate on this invention having a filing date before that of the application on which priority is claimed:

Application No.	Country	Filing Date	Priority Claimed (yes or no)
199 21 284.8	Germany	May 7, 1999	yes

I hereby claim the benefit of Title 35, United States Code §120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in a listed prior United States application in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge my duty to disclose any material information under 37 C.F.R. §1.56(a) which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

Application No.	Filing Date	Status (patented, pending, abandoned)

hereby appoint Stephan A. Pendorf, Reg. No. 32,665 and Yaté K. Cutliff, Reg. No. 40,577, my attorneys to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith, and request that all correspondence about the application be addressed to Stephan A. Pendorf & Cutliff, P.O. Box 20445, Tampa, FL 33622-0445

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

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I HEREBY CERTIFY THAT THIS PAPER IS BEING DEPOSITED WITH THE UNITED STATES POSTAL SERVICE "EXPRESS MAIL" POST OFFICE TO "ADDRESSEE" SERVICE UNDER 37 CFR 1.10 IN AN ENVELOPE ADAPTED TO THE COMMISSIONER OF PATENTS AND TRADEMARKS, WASHINGTON, D.C. 20501, ON THIS DATE. THE COMMISSIONER IS HEREBY AUTHORIZED TO CHARGE ANY FEES ARISING HEREFROM AT ANY TIME TO DEPOSIT ACCOUNT 16-0877.

1-8-01
DATE

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